

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A nucleic acid molecule encoding a mutant Aequorea victoria Green Fluorescent Protein, said mutant Green Fluorescent Protein mutated at amino acid positions corresponding to the amino acid residues at positions 64 and 65 of SEQ ID NO:4 having an amino acid sequence comprising an amino acid residue lacking an aromatic ring structure at position 64 and an amino acid residue having a side chain no longer than two carbon units in length at position 65,

wherein said residue at position 64 is alanine, valine, leucine, isoleucine, proline, methionine, glycine, serine, threonine, cysteine, alanine, asparagine, glutamine, aspartate, or glutamate; and

wherein said residue at position 65 is alanine, glycine, threonine, cysteine, asparagine, or aspartate

with the provisos that

if said residue at position 64 is leucine then said residue at position 65 is not alanine, glycine, cysteine, or threonine;

if said residue at position 64 is valine then said residue at position 65 is not alanine;

if said residue at position 64 is methionine then said residue at position 65 is not glycine; and

if said residue at position 64 is glycine then said residue at position 65 is not cysteine.

2. (new): The nucleic acid molecule of claim 1, wherein said residue at position 65 is threonine.

3. (new): The nucleic acid molecule of claim 2, wherein said residue at position 64 is cysteine.

4. (new): The nucleic acid molecule of claim 2, wherein said residue at position 64 is methionine.

5. (new): The nucleic acid molecule of claim 1, wherein said residue at position 65 is cysteine.

6. (new): The nucleic acid molecule of claim 5, wherein said residue at position 64 is threonine.

7. (new): The nucleic acid molecule of claim 5, wherein said residue at position 64 is valine.

8. (new): A host cell comprising the nucleic acid molecule of claim 1.

9. (new): A vector comprising the nucleic acid molecule of claim 1.

10. (new): The vector of claim 9, wherein said vector is an expression vector.

11. (new): A host cell comprising the vector of claim 9.

12. (new): A method for producing a mutant Green Fluorescent Protein (GFP), comprising culturing the host cell of claim 11 under conditions favoring the production of a mutant GFP, and isolating said mutant GFP from said host cell.

13. (new): A kit comprising at least one container containing the nucleic acid molecule of claim 1.

14. (new): The kit of claim 13, further comprising at least one additional container containing a reagent for delivering said nucleic acid molecule into a host cell.

15. (new): A humanized nucleic acid molecule encoding a mutant *Aequorea victoria* Green Fluorescent Protein, said mutant Green Fluorescent Protein mutated at amino acid positions corresponding to the amino acid residues at positions 64 and 65 of SEQ ID NO:4,

wherein said residue at position 64 is alanine, valine, leucine, isoleucine, proline, methionine, glycine, serine, threonine, cysteine, alanine, asparagine, glutamine, aspartate, or glutamate; and

wherein said residue at position 65 is alanine, glycine, threonine, cysteine, asparagine, or aspartate;

with the provisos that

if said residue at position 64 is leucine then said residue at position 65 is not alanine, glycine, cysteine, or threonine;

if said residue at position 64 is valine then said residue at position 65 is not alanine;

if said residue at position 64 is methionine then said residue at position 65 is not glycine; and

if said residue at position 64 is glycine then said residue at position 65 is not cysteine.

16. (new): A host cell comprising the nucleic acid molecule of claim 15.

17. (new): A vector comprising the nucleic acid molecule of claim 15.

18. (new): The vector of claim 17, wherein said vector is an expression vector.

19. (new): A host cell comprising the vector of claim 18.

20. (new): A method for producing a mutant Green Fluorescent Protein (GFP), comprising culturing the host cell of claim 19 under conditions favoring the production of a mutant GFP, and isolating said mutant GFP from said host cell.

21. (new): A kit comprising at least one container containing the nucleic acid molecule of claim 15.

22. (new): The kit of claim 21, further comprising at least one additional container containing a reagent for delivering said nucleic acid molecule into a host cell.